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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,565	09/29/2003	Yoichi Kodama	018765-144	4272

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BUCHANAN, INGERSOLL & ROONEY PC
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EXAMINER

HAIDER, SAIRA BANO

ART UNIT PAPER NUMBER

1711

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

Office Action Summary	Application No. 10/671,565	Applicant(s) KODAMA ET AL.	
	Examiner Saira Haider	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The rejections have been maintained and altered in view of the amended claims.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaya et al. in view of Matsuura et al. (US 5,508,357).
4. Yamaya applies as above, teaching the combination of polyimides and bismaleimides applied to glass and metal plates but failing to teach the compositions applied to metal foils or polyimides and metal foils. Yamaya discloses 1,3-bis(3-maleimidophenoxy)benzene, which meets the newly added limitation regarding the meta-position substitution (col. 4, lines 60-61, Table 1 (Ex. 16 & 17). Matsuura teaches similar polyimide/bismaleimide thermosetting compositions, where the materials are applied to metal foils and as adhesives between polyimide films and metal foils (col. 11 lines 51-62; col. 12 lines 34-63). The articles are formed to provide substrates for flexible printed circuit boards or TAB tapes. It is the examiner's position that it would have been prima facie obvious to use the polyimide/bismaleimide compositions of Yamaya's invention applied to metal foils or between polyimide films and metal foils to form substrates for flexible printed circuit boards or TAB tapes having Yamaya's improved toughness, flexibility, adhesion, and heat resistance properties.
5. Regarding the limitations drawn to the polyimide, Yamaya teaches polyimides fitting the claimed formulas (1) and (4) (col. 1 line 54-col. 2 line 30; examples).

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6. In reference to the newly added claim, # 7, Matsuura exemplifies that the thickness of the metal foil is 35 μm (example 4). It would have been obvious to use the metal foil in the thickness specified by Matsuura in order to fully embody the invention taught by the combination of Yamaya and Matsuura.

7. Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. in view of Yamaya et al.

8. Matsuura teaches thermosetting blends of polyimide and bismaleimide (abstract), where the preferred polyimides fit the applicant's formulas (1) and (4) (col. 3 lines 16-53). The materials are applied to metal foils or between polyimide films and metal foils (col. 11 lines 51-62; col. 12 lines 34-63). However, the bismaleimides exemplified having three phenyl groups do not have the claimed radical for X (col. 9). Yamaya teaches similar polyimide/bismaleimide thermosetting materials, where the bismaleimides contain 2-4 phenyl groups and have linking groups of oxygen, direct bonds, carbonyl groups, sulfonyl groups, and sulfinyl groups (col. 2 lines 32-68). Yamaya discloses 1,3-bis(3-maleimidophenoxy)benzene, which meets the limitation regarding the meta-position substitution (col. 4, lines 60-61, Table 1 (Ex. 16 & 17)). The examples indicate that those materials made with compounds fitting the applicant's formula have lower softening points and higher tensile shear strengths than those made with N,N'-diphenylmethane bismaleimide, a compound exemplified by Matsuura (Yamaya, table 1; Matsuura, example 4). It is the examiner's position that it would have been *prima facie* obvious to use the bismaleimides of Yamaya's invention in Matsuura's invention to provide improved tensile shear strengths and lower softening points to the compositions.

9. In reference to the newly added claim, # 7, Matsuura exemplifies that the thickness of the metal foil is 35 μm (example 4). It would have been obvious to use the metal foil in the thickness

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specified by Matsuura in order to fully embody the invention taught by the combination of Yamaya and Matsuura.

Response to Arguments

10. Applicant's arguments filed 8/16/2006 have been fully considered but they are not persuasive.

11. Applicants' have essentially argued that the combination of Yamaya and Matsuura is invalid because Yamaya teaches away from a metal base material, and that it would not be obvious for one to substitute the resin of Yamaya in the invention of Yamaya.

12. In reference to the first argument, applicants have cited col. 5, lines 44+ of Yamaya. Examiner has thoroughly considered the arguments and the reference, and concluded that Yamaya does not teach away from utilization of a metal foil as a base material. Rather the reference states that the resin composition can be cast and dried on a glass plate, stainless steel plate, or the like (col. 5, lines 47-51). It is known in the art, as evidenced by Hawley's Condensed Chemical Dictionary (14th Edition), that stainless steel comprises metals, hence Yamaya teaches that the resin can be readily employed and is suitable with metal containing base materials. Yamaya further states, col. 5, lines 47-51, that the reason to cast and dry the resin on the stainless steel plate, for example, is so that it can be used as a film-like adhesive free of any base material for various applications. This is merely a reason for casting and drying the resin on a stainless steel plate and does not obviate one from casting and drying the resin on the stainless steel plate. This disclosure does not teach away from the combination of Yamaya and Matsuura. Hence the combination is rendered valid.

13. In reference to the second argument, applicants have argued that if one were to attempt to use the resin of Yamaya in place of the resin of Matsuura it is not ensured that the desired characteristics of excellent solubility and low softening point can be obtained. Examiner has

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thoroughly considered the arguments and the references, and concluded that a reasonable expectation of success exists, wherein it has been held that “[o]nly a reasonable expectation of success, not absolute predictability is necessary for obviousness.” *In re Longi*, 759F.2d 887, 897, 225 USPQ 645, 651-52 (Fed. Cir. 1985). An expectation is reasonable if one of ordinary skill in the art would have considered it “logical to anticipated with a high degree of probability that a trial of the combination would have been successful.” *In re Pantzer*, 341 F2d. 121, 126;144 USPQ 415, 419 (CCPA 1965). In view of the cited sections of Yamaya discussed above, (col. 5, lines 47-51), there is a high degree of probability that a trial of the combination would have been successful. Hence the combination is rendered valid.

14. Applicants have essentially argued that there is nothing in Yamaya to lead one of ordinary skill in the art to only the embodiments of Examples 16 and 17. Examiner has thoroughly considered the arguments and reference, and concludes that Yamaya discloses 1,3-bis(3-maleimidophenoxy)benzene, which have lower softening points and higher tensile shear strengths than those made with N,N'-diphenylmethane bismaleimide, a compound exemplified by Matsuura (Yamaya, table 1; Matsuura, example 4). Therefore sufficient motivation exists for one to substitute the resin of Yamaya for the resin in the invention of Matsuura.

15. In reference to the rejection over Yamaya in view of Matsuura, it is noted that the issue of obviousness is the metal foil, not selection of the bismaleimide compound linked at the meta-position. A genus does not always anticipate a claim to a species within the genus. However, when the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). Hence, since Yamaya has clearly named and exemplified the claimed species, this limitation is anticipated, and the prima facie case of obviousness is established on the basis of the metal foil.

Declaration under 37 CFR 1.132

16. The declaration under 37 CFR 1.132 filed March 17, 2006 is insufficient to overcome the rejection of claims 1-4 and 7 as rejected above, because it refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). Additionally, case law holds that evidence of superior properties in one species insufficient to establish the nonobviousness of a subgenus containing hundreds of compounds. *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978).

17. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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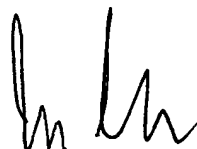
calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saira Haider whose telephone number is (571) 272-3553. The examiner can normally be reached on Monday-Friday from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saira Haider
Examiner
Art Unit 1711



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700